Fig. 1

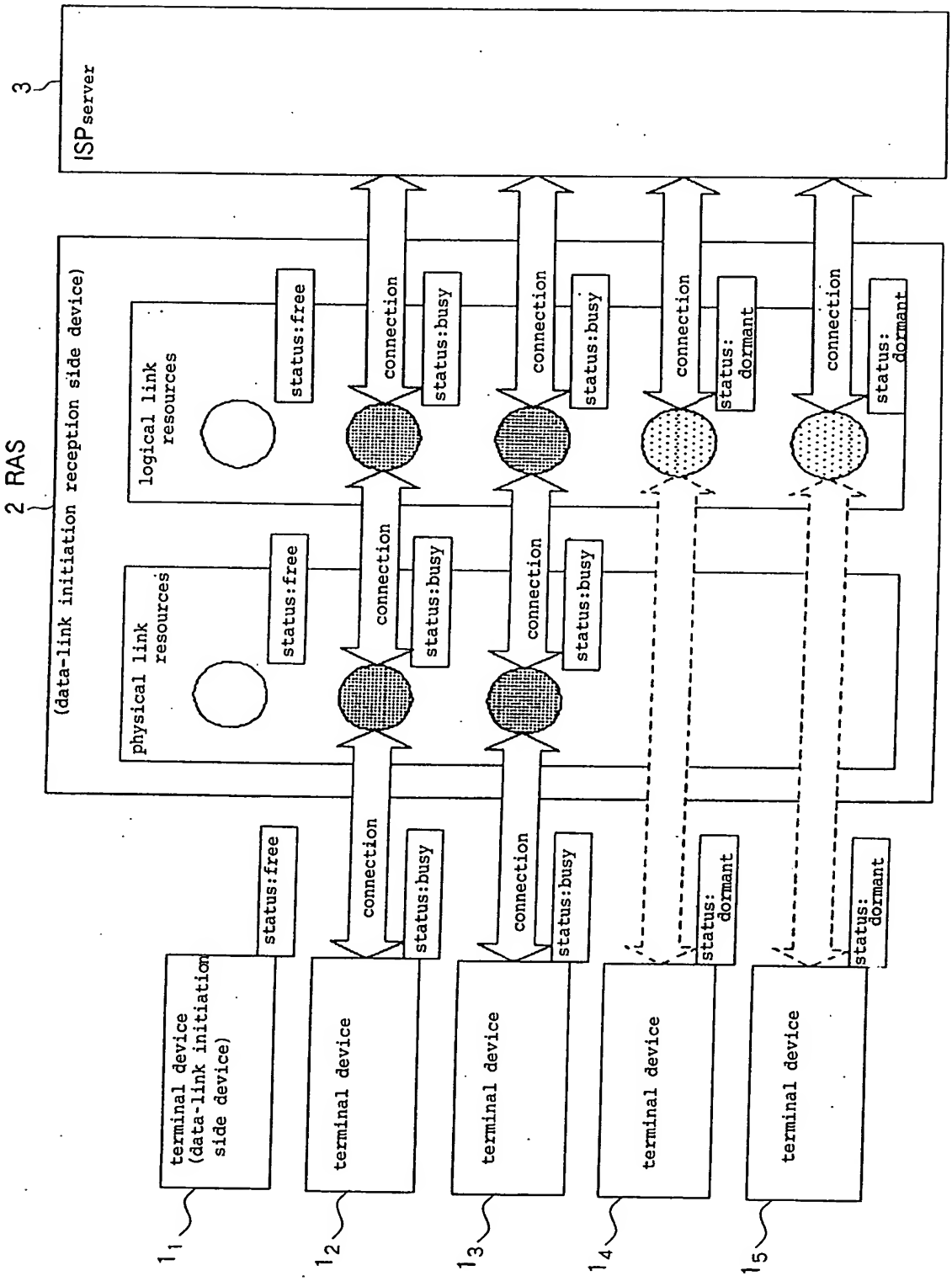

3
ISP server
2 RAS
(data-link initiation reception side device)
logical link resources
physical link resources
status:free
status:busy
status: dormant
connection
terminal device
(data-link initiation side device)
terminal device
1 1
1 2
1 3
1 4
1 5

Fig. 2

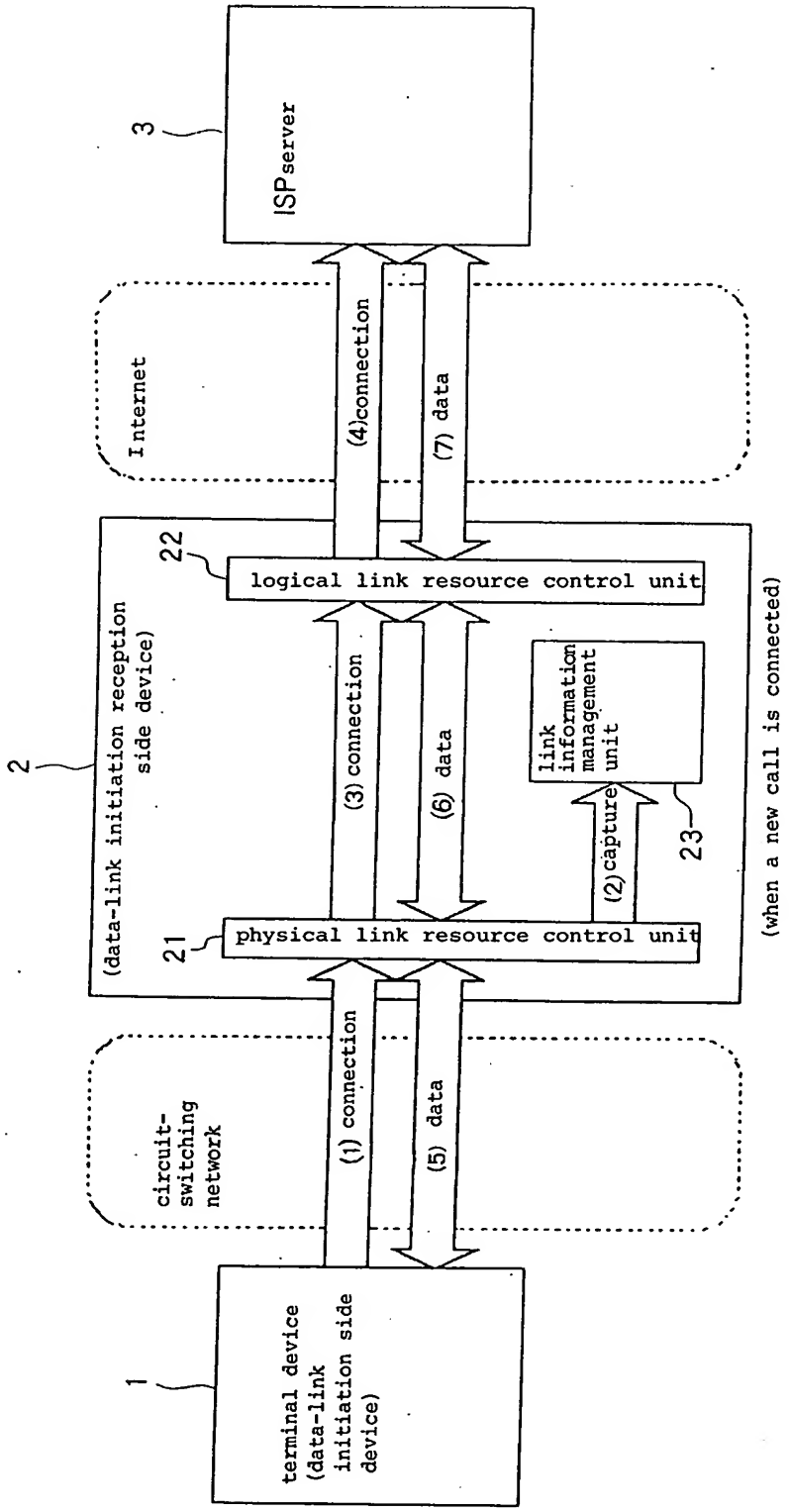

3
ISP server
Internet
(4)connection
(7) data
22
logical link resource control unit
2
(data-link initiation reception side device)
(3) connection
(6) data
link information management unit
(2) capture
23
21
physical link resource control unit
(when a new call is connected)
circuit-switching network
(1) connection
(5) data
1
terminal device (data-link initiation side device)

Fig. 3

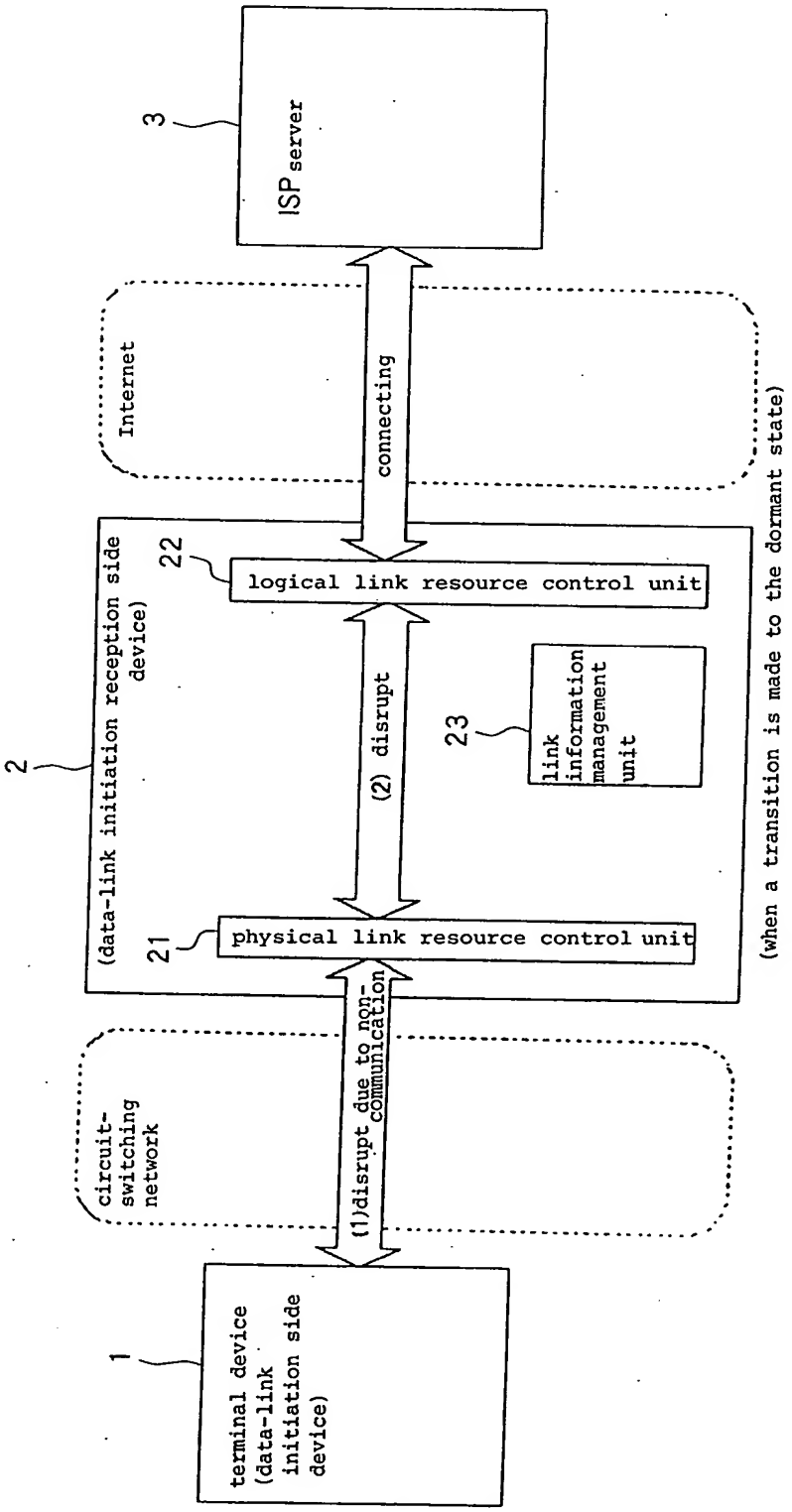

3
ISP server
Internet
connecting
2
(data-link initiation reception side device)
22
logical link resource control unit
(2) disrupt
23
link information management unit
21
physical link resource control unit
(when a transition is made to the dormant state)
circuit-switching network
(1)disrupt due to non-communication
1
terminal device (data-link initiation side device)

Fig. 4

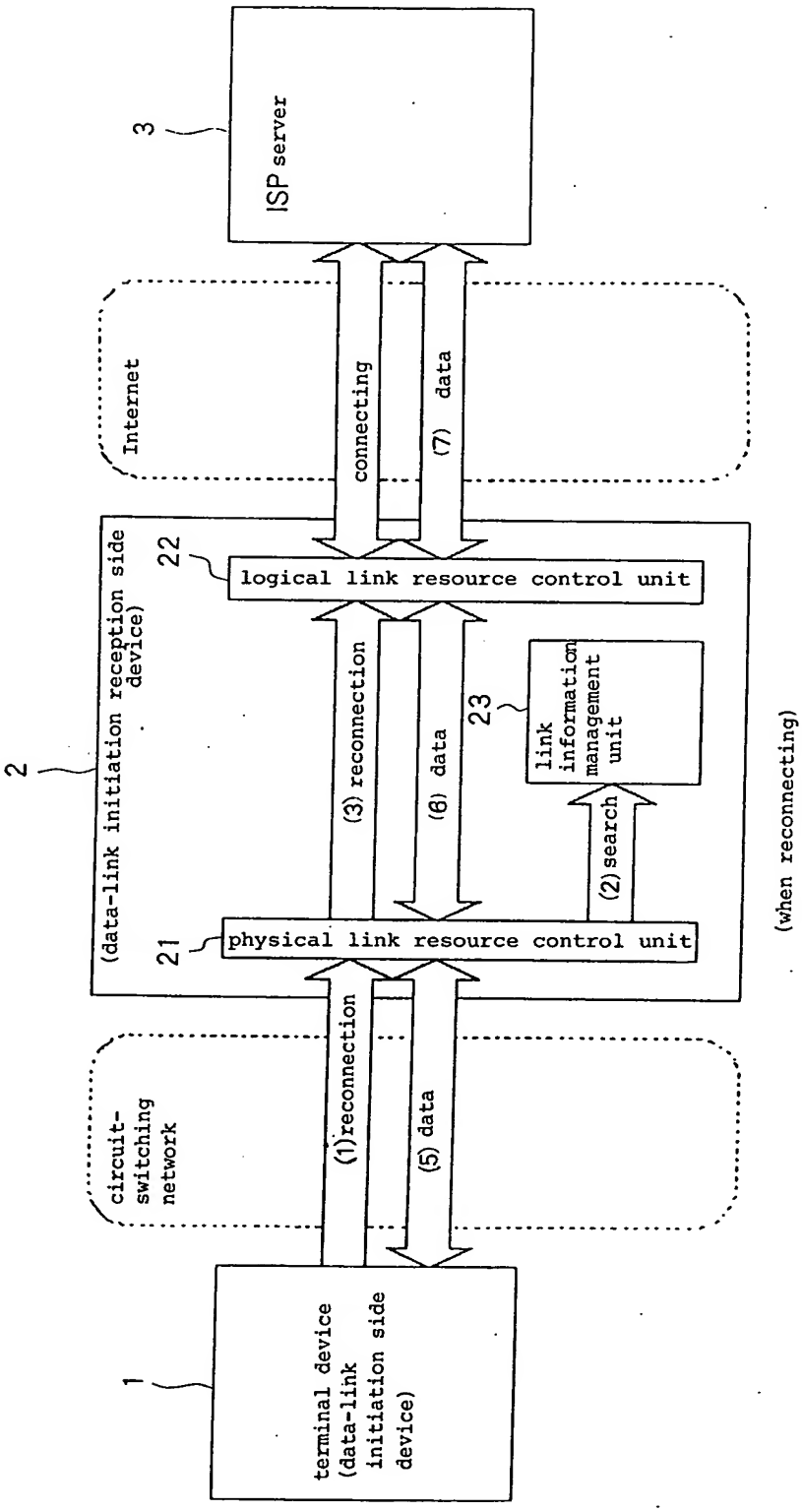

3
ISP server
Internet
connecting
(7) data
2
(data-link initiation reception side device)
22
logical link resource control unit
(3) reconnection
(8) data
23
link information management unit
(2) search
21
physical link resource control unit
(when reconnecting)
circuit-switching network
(1) reconnection
(5) data
1
terminal device (data-link initiation side device)

Fig. 5

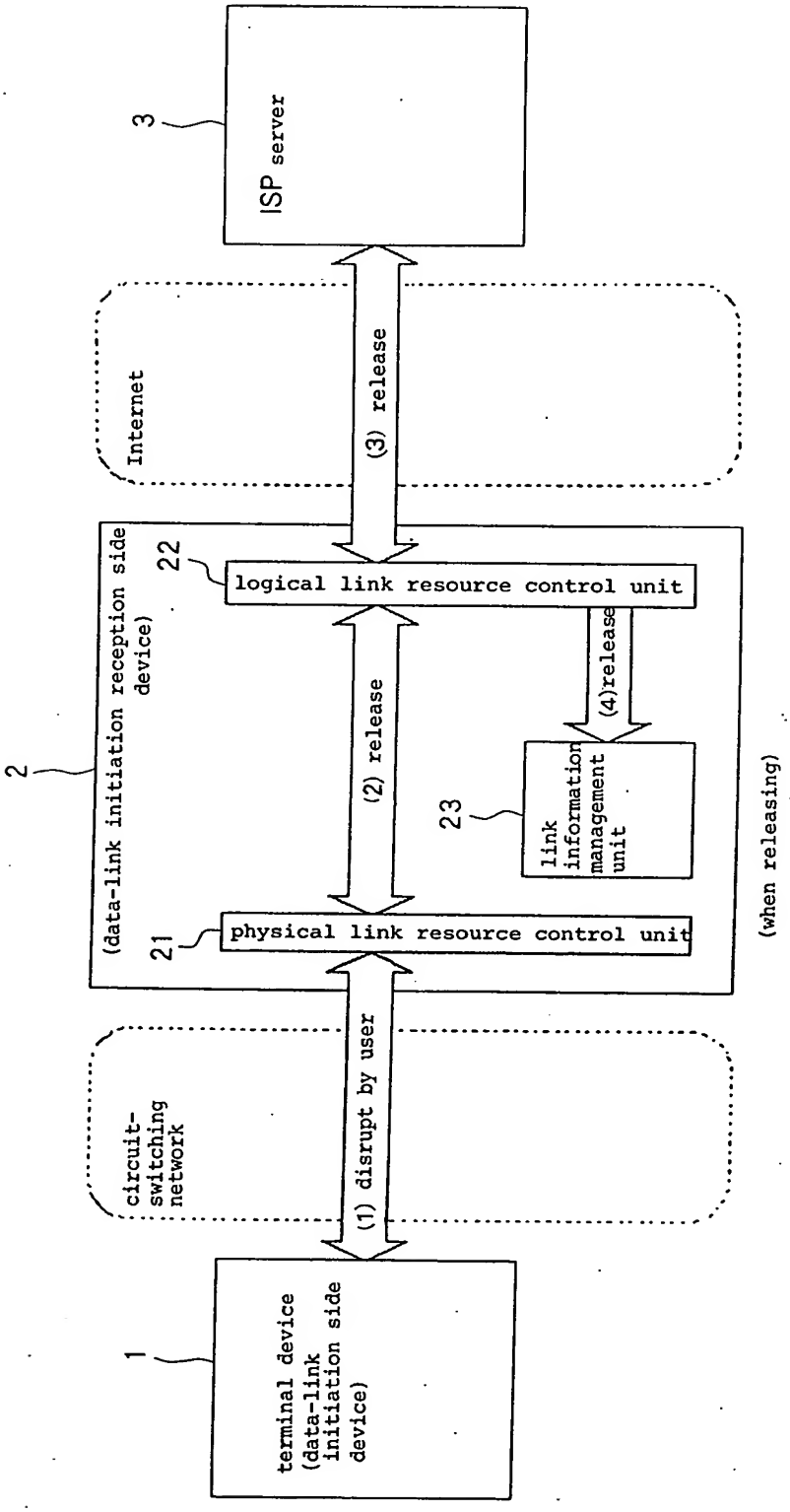

3
ISP server
Internet
(3) release
2
(data-link initiation reception side device)
22
logical link resource control unit
(4)release
(2) release
23
link information management unit
21
physical link resource control unit
(when releasing)
circuit-switching network
(1) disrupt by user
1
terminal device (data-link initiation side device)

Fig. 6

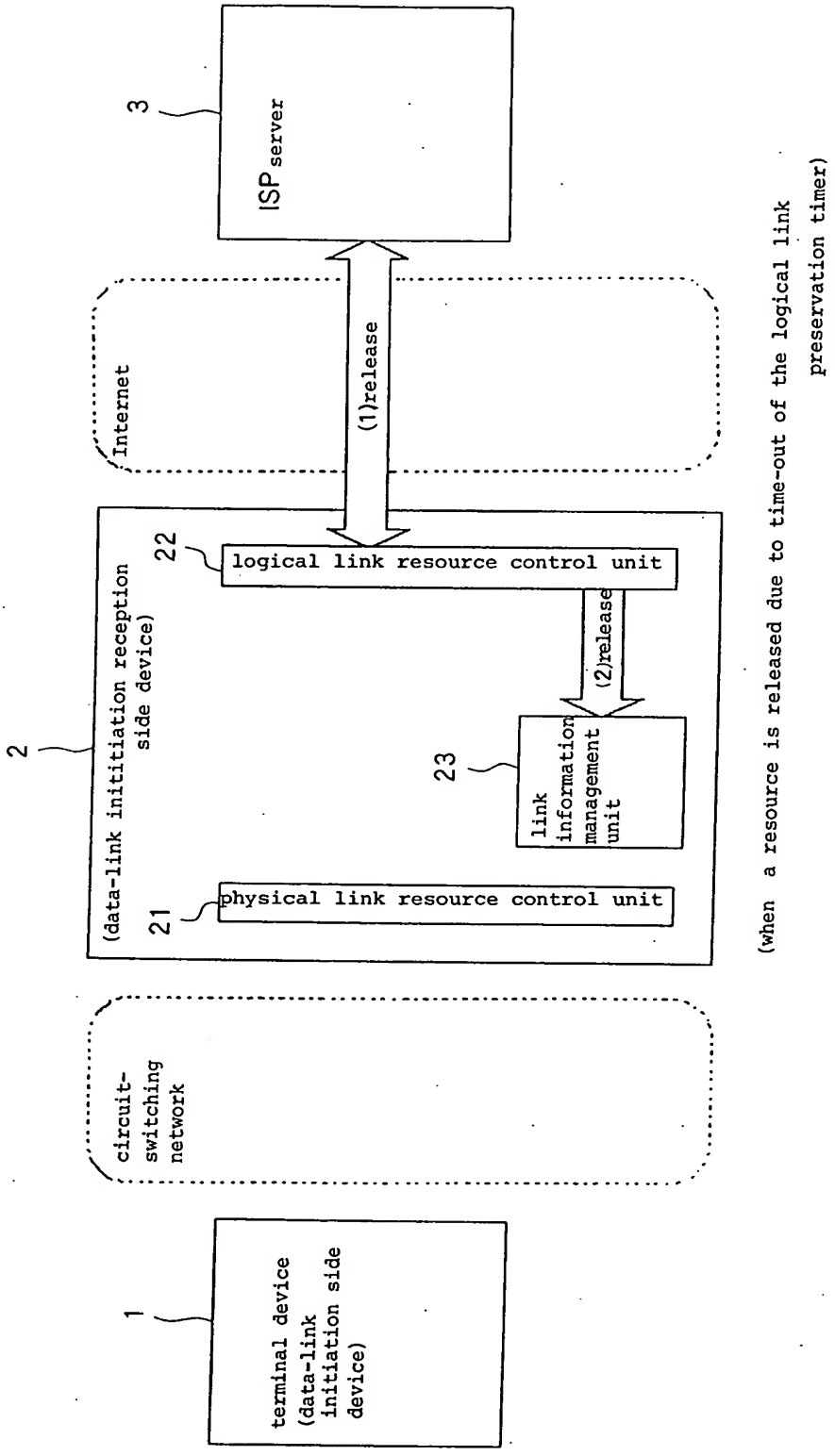

3
ISP server
Internet
(1)release
2
(data-link initiation reception side device)
22
logical link resource control unit
(2)release
23
link information management unit
21
physical link resource control unit
circuit-switching network
1
terminal device (data-link initiation side device)
(when a resource is released due to time-out of the logical link preservation timer)

Fig. 7

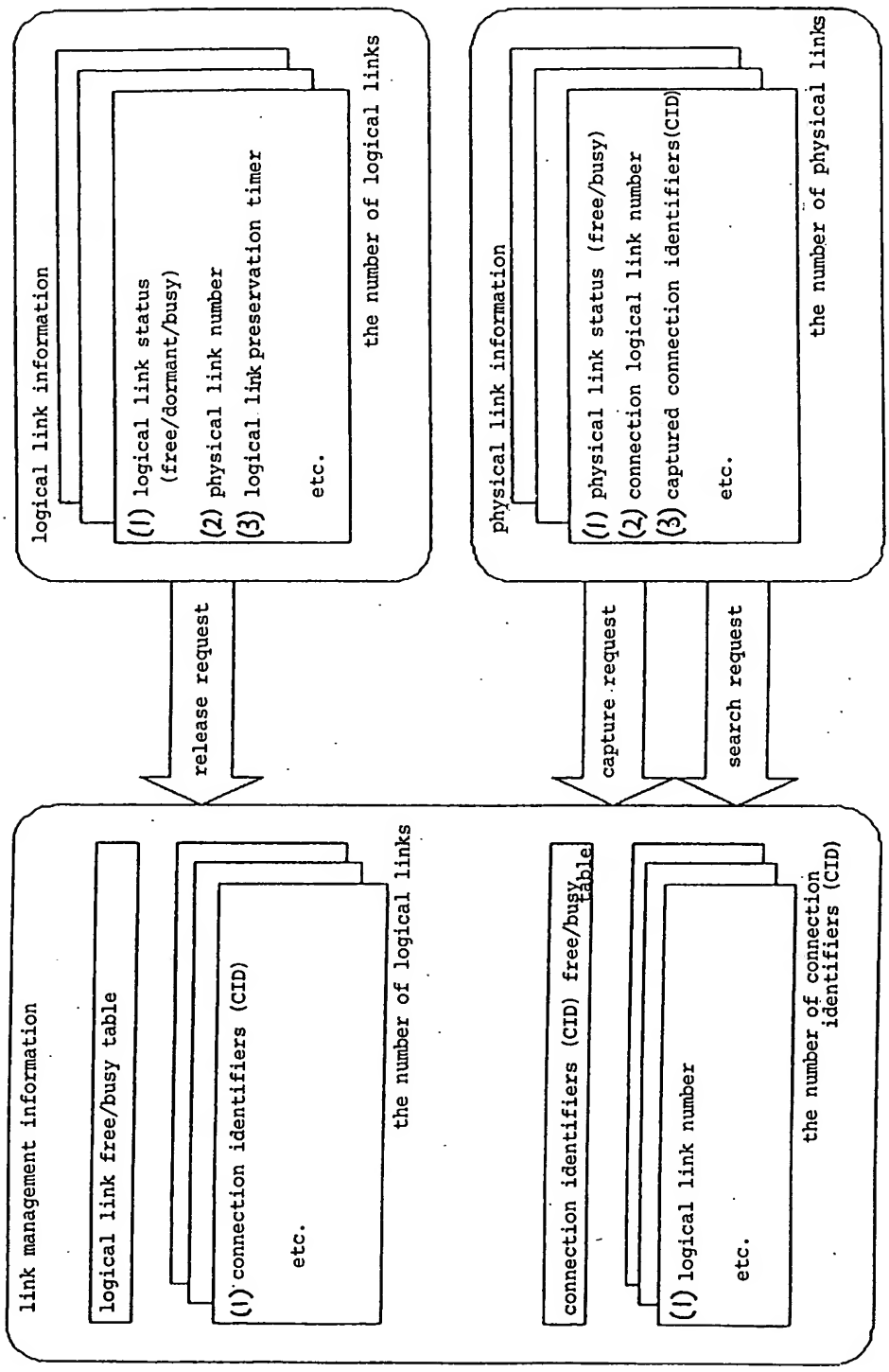

logical link information
(1) logical link status (free/dormant/busy)
(2) physical link number
(3) logical link preservation timer
etc.
the number of logical links
physical link information
(1) physical link status (free/busy)
(2) connection logical link number
(3) captured connection identifiers(CID)
etc.
the number of physical links
release request
capture request
search request
link management information
logical link free/busy table
(1) connection identifiers (CID)
etc.
the number of logical links
connection identifiers (CID) free/busy table
(1) logical link number
etc.
the number of connection identifiers (CID)

Fig. 8

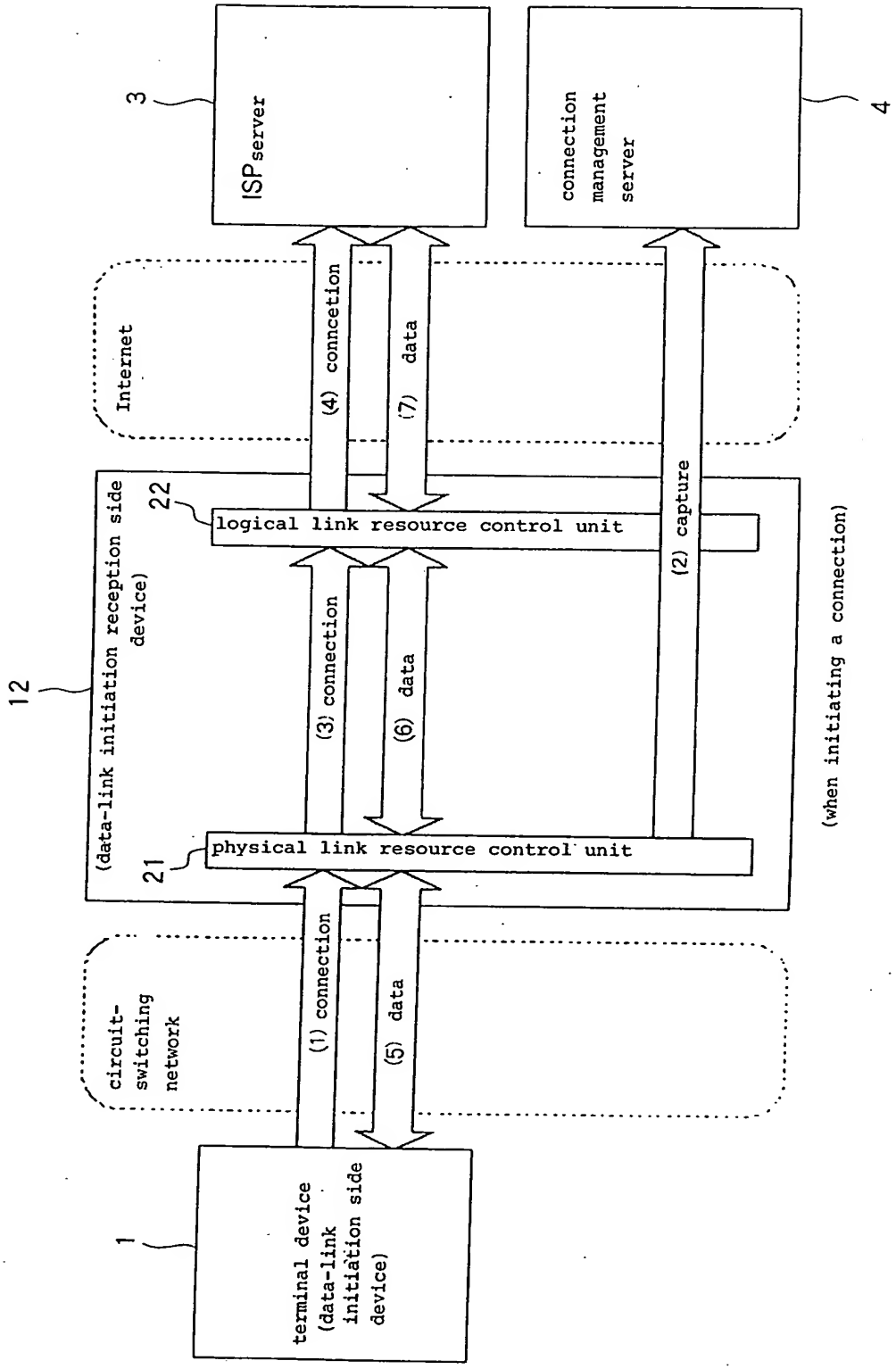

3
ISP server
4
connection management server
Internet
(4) connection
(7) data
(2) capture
22
logical link resource control unit
12
(data-link initiation reception side device)
(3) connection
(6) data
(when initiating a connection)
21
physical link resource control unit
circuit-switching network
(1) connection
(5) data
1
terminal device (data-link initiation side device)

Fig. 9

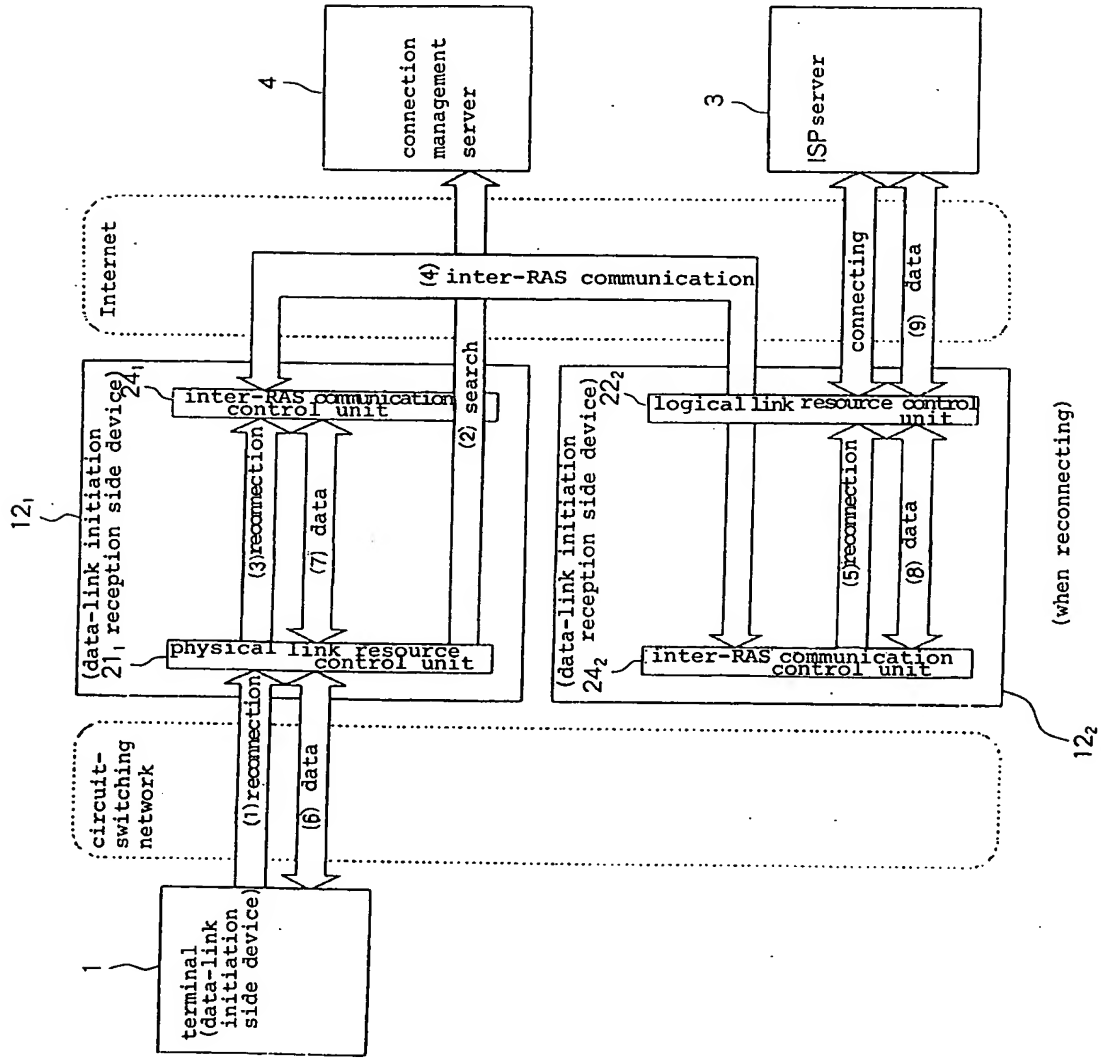
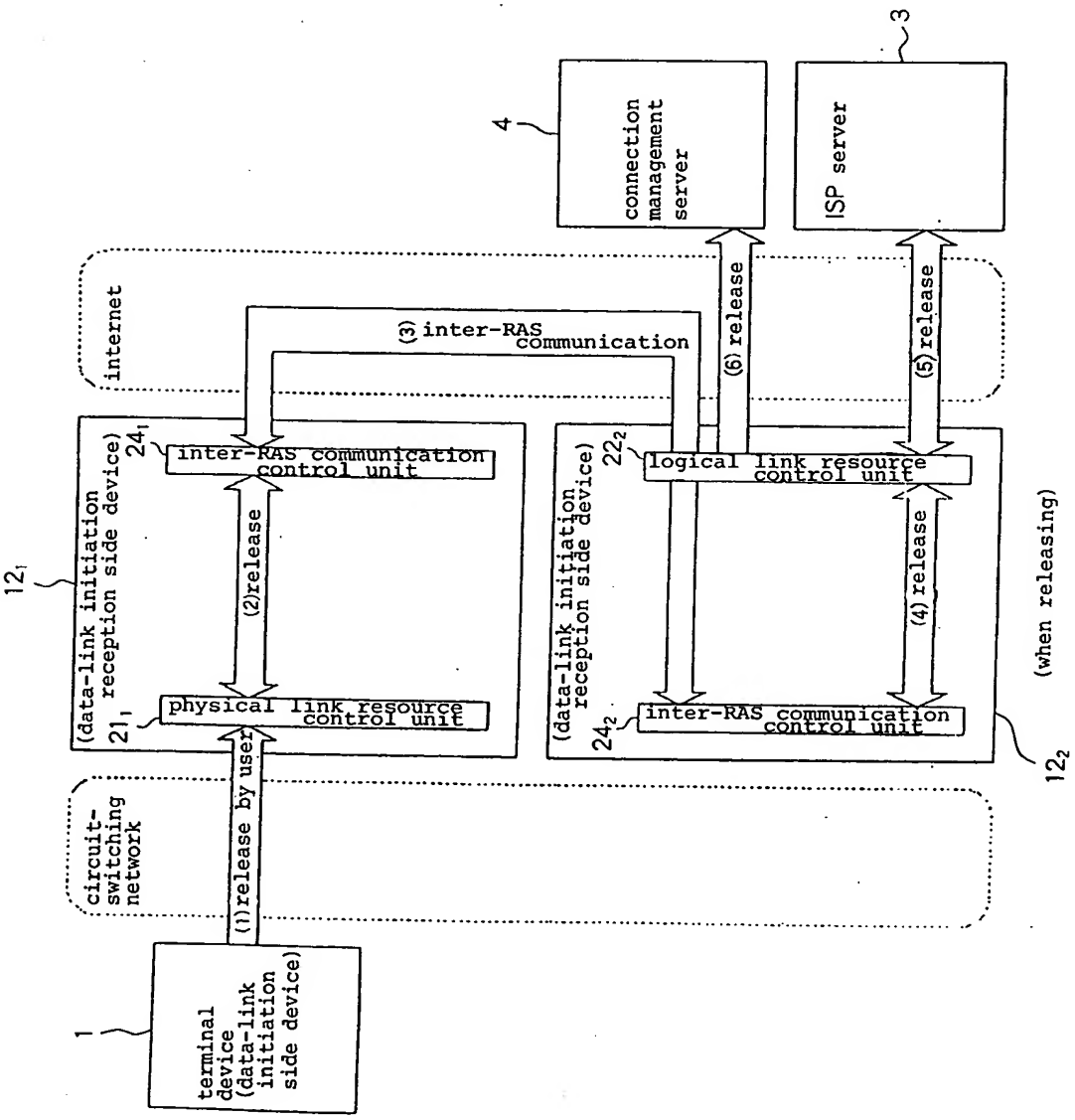

4
connection management server
3
ISP server
Internet
(4) inter-RAS communication
connecting
(9) data
12₁
(data-link initiation side device) 21₁ reception side device)
24₁
inter-RAS communication control unit
(2) search
(3)reconnection
(7) data
physical link resource control unit
22₂
logical link resource control unit
(5)reconnection
(8) data
(data-link initiation reception side device) 24₂
inter-RAS communication control unit
(when reconnecting)
12₂
circuit-switching network
(1)reconnection
(6) data
1
terminal (data-link initiation side device)

Fig. 10


3
4
connection management server
ISP server
internet
(3) inter-RAS communication
(6) release
(5) release
(data-link initiation reception side device)
12_1
24_1
inter-RAS communication control unit
(2)release
21_1
physical link resource control unit
(data-link initiation reception side device)
22_2
logical link resource control unit
(4) release
24_2
inter-RAS communication control unit
12_2
(when releasing)
circuit-switching network
(1) release by user
terminal device (data-link initiation side device)
1